

## AMPHIBIA: CAUDATA: PLETHODONTIDAE

## PLETHODON IDAHOENSIS

## Catalogue of American Amphibians and Reptiles.

Wilson, A.G., Jr. and P. Ohanianian. 2002. *Plethodon idahoensis*.

***Plethodon idahoensis* Slater and Slipp**  
Coeur d'Alene Salamander

*Plethodon idahoensis* Slater and Slipp 1940:38. Type locality, "Northeast corner of Coeur d'Alene Lake, Kootenai County, Idaho; elevation about 2160 feet; zone, Semiarid Transitional." Holotype, National Museum of Natural History (USNM 110504), an adult male collected by J.R. Slater, 13 September 1939 (not examined by authors).

*Plethodon vandykei idahoensis*: Lowe 1950:93.

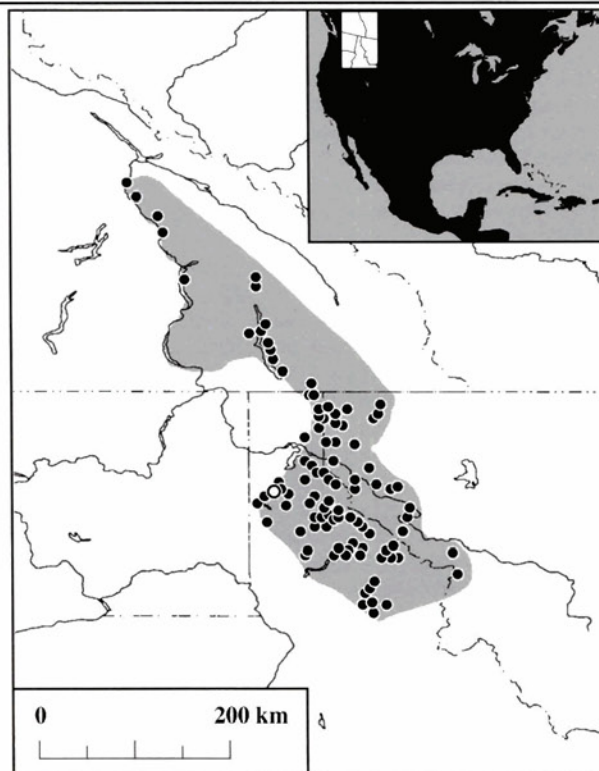
*Plethodon vandykei*: Brodie 1970:487.

• **CONTENT.** No subspecies are recognized.

• **DEFINITION.** *Plethodon idahoensis* is a dark brown to black western *Plethodon* with a pale, typically uneven dorsal stripe. The stripe may be yellow, green, orange, or red, does not extend to the tip of the tail, and is often invaded by melanophores, especially on the head. An irregular yellow gular patch usually is present. Gray to white flecking often occurs on the sides, venter, and limbs. Juvenile markings are similar to those of adults.

*Plethodon idahoensis* has parotoid glands and slightly webbed toes. The species has a relatively short trunk (modal number of 14 costal grooves), long legs (0.5–3 costal folds between adpressed limbs), and a broad head. Individuals mature sexually at approximately 45 mm SVL; hatchlings average 18 mm. Maximum SVL can exceed 65 mm. Adult males have a mental gland, vent lobes, and nasolabial cirri.

• **DIAGNOSIS.** Webbed toes, parotoid glands, 14 costal grooves, and yellow gular patch distinguish *Plethodon idahoensis* from all western congeners except *P. vandykei*. *Plethodon idahoensis* has a more flattened form and wider head than *P. vandykei*. The pigmentation of *P. idahoensis* resembles that of melanistic *P. vandykei*, but the latter has a broader dorsal stripe, yellow limb bases, and a larger gular patch.



**MAP.** The distribution of *Plethodon idahoensis*. The circle marks the type locality and dots represent other known localities.

• **DESCRIPTIONS.** Descriptions were provided by Behler and King (1979), Bishop (1943), Brodie (1969, 1970), Brodie and Storm (1970), Corkran and Thoms (1996), Fitcher and Linder (1964), Highton (1962), Linder and Fitcher (1977), Nussbaum et al. (1983), Petranka (1998), Slater and Slipp (1940), Smith (1978), and Stebbins (1951, 1954, 1966, 1985). Less detailed descriptions are cited in **Pertinent Literature**.

Sexual differences are described in Brodie (1969, 1970), Brodie and Storm (1970), Lynch (1984), Nussbaum et al. (1983),



**FIGURE.** Photograph of living *Plethodon idahoensis* from Lincoln Co., Montana (photograph by A.G. Wilson).

Petranka (1998), Slater and Slipp (1940), and Stebbins (1951, 1954). An egg mass was described by Larson et al. (1998) and a spermatophore by Lynch and Wallace (1987).

• **ILLUSTRATIONS.** Stebbins (1951, 1954) provided an ink drawing of the adult dorsum and venter. Ink drawings of the parotoid glands and dorsal stripe are included in Fitcher and Linder (1964) and Powell et al. (1998). A color rendering of an adult in dorsolateral view appears in Smith (1978). Stebbins (1966, 1985) provided a color rendering of the adult dorsum.

Black-and-white photographs with dorsolateral views of adults appear in Bishop (1943), Franz (1970), Nussbaum et al. (1983), Petranka (1998), and Slater and Slipp (1940). Behler and King (1979) provided a color photograph of an adult in dorsolateral view. A black-and-white photograph of preserved specimens appears in Black (1970). Color photographs in Corkran and Thoms (1996) depict the juvenile and adult dorsum, and the adult venter with iridophores and yellow gular patch. Petranka (1998) included a color photograph of an adult and a juvenile, both in dorsolateral view.

Lynch and Wallace (1987) included diagrams of courtship and a line drawing of the spermatophore. Hilton (1951) included a line drawing of a superficial nasal gland. A radiograph of an adult with scoliosis appeared in Peterson et al. (1999). Staub (1995) provided a black-and-white photograph of a partially eaten adult.

• **DISTRIBUTION.** *Plethodon idahoensis* is the only plethodontid known from the northern Rocky Mountains. The species' southern range limits are in the Selway River drainage of Idaho and the Bitterroot River drainage of Montana. Its northernmost populations occupy the Duncan and Columbia river drainages of southeastern British Columbia. The species has a discontinuous distribution in mountainous regions at elevations of 500–1550 m. *Plethodon idahoensis* inhabits temperate mesophytic forests in the Rocky Mountain disjunct coastal forest province. The species is typically encountered in moist, rocky situations such as stream margins and seepages.

• **FOSSIL RECORD.** None.

• **PERTINENT LITERATURE.** Published references to the species are listed by topic: **abnormality** (Peterson et al. 1999), **bibliography** (Brodie and Storm 1970), **biogeography** (Bury et al. 1991; Duellman and Sweet 1999; Howard et al. 1993; Johnson 1987; Nielson et al. 2001; Savage 1952; Thompson 1984; Thurow 1968; Wake 1966; Wilson 1993; Wilson and Larsen 1998, 1999), **checklists** (Banks et al. 1987, Franz 1971, Frost 1985, Harding 1983, Orchard 1990, Schmidt 1953, Stejneger and Barbour 1943, Tanner 1941, Weller and Green 1997), **common names** (Collins 1990, 1997; Collins et al. 1982; Conant et al. 1956; Frank and Ramus 1995; Green 1999; Orchard 1990), **comparison with other species** (Burns 1954, 1962), **conservation** (Alvo and Oldham 2000, Cannings et al. 1999, Dodd and Siegel 1991, Groves et al. 1996, Heglund et al. 2000, Munro 1993, Orchard 1992, Riexinger 1985, Steeger and Fenger 1992, Weller and Green 1997), **courtship** (Lynch and Wallace 1987), **descriptions** (Behler and King 1979; Bishop 1943; Black 1970; Blair 1957, 1968; Brodie 1969, 1970; Brodie and Storm 1970; Cochran and Goin 1970, Corkran and Thoms 1996; Fitcher and Linder 1964; Linder and Fitcher 1977; Nussbaum et al. 1983; Petranka 1998; Slater and Slipp 1940; Smith 1978; Stebbins 1951, 1954, 1966, 1985), **diagnostic characters** (Brodie 1969, 1970; Brodie and Storm 1970; Corkran and Thoms 1996; Nussbaum et al. 1983; Petranka 1998; Stebbins 1951, 1954, 1966, 1985; Wilson and Larsen 1999), **diet** (Lindeman 1993, Wilson and Larsen 1988), **distribution**

(Boundy 2001; Brodie 1969, 1970; Brodie and Storm 1970; Dumas 1957; Groves et al. 1996; Holmberg et al. 1984; Slater 1941; Slater and Slipp 1940; Teberg 1963, 1965; Wilson et al. 1989, 1997), **eggs** (Larson et al. 1998, Lynch 1984), **electrophoretic studies** (Highton and Larson 1979, Howard et al. 1993), **growth** (Lynch 1984), **habitat** (Braumandl et al. 1992, Brodie 1969, Groves et al. 1996, Stebbins 1951, Steeger and Fenger 1992, Wilson et al. 1997), **keys** (Bishop 1943; Blair 1957, 1968; Brodie 1969; Corkran and Thoms 1996; Highton 1962; Linder and Fitcher 1977; Nussbaum et al. 1983; Petranka 1998; Powell et al. 1998; Slater 1941; Smith 1978; Stebbins 1951, 1954, 1966, 1985), **morphology** (Brodie 1968, Hilton 1951), **morphometric studies** (Brodie 1969, 1970; Highton 1962; Wilson 1993, Wilson and Larsen 1999), **natural history** (Black 1970, Brodie 1969, Fitcher and Linder 1964, Franz 1970, Hilton 1948, Holmberg et al. 1984, Linder and Fitcher 1977, Stebbins 1951, Wilson and Larsen 1988), **nomenclatural history** (Frost 1985, Howard et al. 1993), **predators** (Wilson and Simon 1985, Staub 1995, Wilson and Wilson 1996), **range maps** (Bishop 1943; Black 1970; Brodie 1969, 1970; Brodie and Storm 1970; Cannings et al. 1999; Corkran and Thoms 1996; Highton 1962; Nussbaum et al. 1983; Petranka 1998; Smith 1978; Stebbins 1951, 1954, 1966, 1985; Wilson 1993; Wilson and Larsen 1998; Wilson et al. 1997), **reproduction** (Blessing et al. 1999, Herrington 1985, Herrington and Larsen 1987, Jones 1989, Lynch 1984, Nussbaum et al. 1983), **seasonal activity** (Nussbaum et al. 1983, Wilson and Larsen 1988), **sexual differences** (Lynch 1984, Stebbins 1951), **speciation** (Highton and Larson 1979, Howard et al. 1993, Wilson 1993, Wilson and Larsen 1999), **spermatophore** (Lynch and Wallace 1987), **systematics** (Brodie 1969, 1970; Highton 1962; Highton and Larson 1979), **taxonomy** (Brodie 1969, 1970; Highton 1990; Highton and Larson 1979; Howard et al. 1993; Lowe 1950; Nussbaum et al. 1983).

• **ETYMOLOGY.** The specific epithet, *idahoensis*, refers to the State of Idaho.

• **REMARKS.** The Canadian distribution of this species is poorly known. The accompanying map includes a northern range extension in the Columbia River drainage 95 km north of Revelstoke, BC (51°38'00"N, 118°36'45"W; 637 m elev.).

• **COMMENTS.** Results from recent analyses (Howard et al. 1993; Wilson and Larsen 1998, 1999) support recognition of *Plethodon idahoensis* as a distinct species. Although described as a species originally (Slater and Slipp 1940), *P. idahoensis* subsequently was considered by some to be either a subspecies (Lowe 1950) or an unnamed geographic group (Brodie 1970) of *P. vandykei*. Literature prior to 1990 may refer to the salamander as *P. idahoensis*, *P. vandykei idahoensis*, or *P. vandykei*.

• **ACKNOWLEDGMENTS.** We are grateful for assistance from Sue Anderson, Ted Antifeau, Marc-Andre Beaucher, Billie Gowans, Diane Merton, and Irene Teske. The B.C. Habitat Conservation Trust Fund provided financial support.

## LITERATURE CITED

- Alvo, A. and M.J. Oldham. 2000. A review of the status of Canada's amphibian and reptile species: a comparison of three ranking systems. *Can. Field-Nat.* 114:520–540.
- Banks, R.C., McDiarmid, R.W., and A.L. Gardner (eds.). 1987. Checklist of Vertebrates of the United States, the U.S. Territories, and Canada. U.S. Fish Wildl. Serv. Res. Publ. (166), Washington, D.C.
- Behler, J.L. and F.W. King. 1979. The Audubon Society Field Guide to North American Reptiles and Amphibians. Alfred A. Knopf, New York.



- Bishop, S.C. 1943. Handbook of Salamanders. The Salamanders of the United States, of Canada, and of Lower California. Comstock Publ. Co. Inc., Ithaca, New York.
- Black, J.H. 1970. Amphibians of Montana. Montana Wildl., Animals of Montana Ser. 1:1–32.
- Blair, A.P. 1957. Amphibians, p. 211–271. In W.F. Blair, A.P. Blair, P. Brodtkorb, F.R. Cagle, and G.A. Moore (eds.), Vertebrates of the United States. McGraw-Hill Book Co., New York.
- . 1968. Amphibians, p. 167–212. In W.F. Blair, A.P. Blair, P. Brodtkorb, F.R. Cagle, and G.A. Moore (eds.), Vertebrates of the United States. 2nd ed. McGraw-Hill Book Co., New York.
- Blessing, B.J., E.P. Phenix, L.L.C. Jones, and M.G. Raphael. 1999. Nests of Van Dyke's Salamander (*Plethodon vandykei*) from the Olympic Peninsula, Washington. Northwest Nat. 80:77–81.
- Boudry, J. 2001. Herpetofaunal surveys in the Clark Fork Valley region, Montana. Herpetol. Nat. Hist. 8:15–26.
- Braumandl, T.F., Curran, M.P., Davis, G.D., Quesnel, H.J., Woods, G.P., DeLong, D.L. and M.V. Ketcheson. 1992. Biogeoclimatic subzones and variants of the Nelson Forest Region, p. 44–199. In T.F. Braumandl and M.P. Curran (eds.), A Field Guide for Site Identification and Interpretation for the Nelson Forest Region. B.C. Min. For., Victoria.
- Brodie, E.D., Jr. 1968. Observations on the mental hedonic gland-clusters of western salamanders of the genus *Plethodon*. Herpetologica 24:248–250.
- . 1969. Geographic variation and systematics of the western *Plethodon*. Ph.D. Diss. Oregon State Univ., Corvallis.
- . 1970. Western salamanders of the genus *Plethodon*: systematics and geographic variation. Herpetologica 26:468–516.
- and R.M. Storm. 1970. *Plethodon vandykei* Van Denburgh. Cat. Amer. Amphib. Rept. (91):1–2.
- Burns, D.M. 1954. A new subspecies of the salamander *Plethodon vandykei*. Herpetologica 10:83–87.
- . 1962. The taxonomic status of the salamander *Plethodon vandykei larselli*. Copeia 1962:177–181.
- Bury, R.B., P.S. Corn, and K.B. Aubry. 1991. Regional patterns of terrestrial amphibian communities in Oregon and Washington, p. 341–350. In L.F. Ruggiero, K.B. Aubry, A.B. Carey, and M.H. Huff (eds.), Wildlife and Vegetation of Unmanaged Douglas-fir Forests. U.S.D.A. For. Serv. Gen. Tech. Rep. PNW-285. Pac. Northw. Res. Sta., Portland, Oregon.
- Cannings, S.G., L.R. Ramsay, D.F. Fraser, and M.A. Fraker. 1999. Rare amphibians, reptiles, and mammals of British Columbia. B.C. Min. Environ., Wildl. Branch and Resour. Inv. Branch, Victoria, British Columbia.
- Cochran, D.M. and C.J. Goin. 1970. The New Field Book of Reptiles and Amphibians. G.P. Putnam's Sons, New York.
- Collins, J.T. 1990. Standard common and current scientific names for North American amphibians and reptiles. 3rd ed. SSAR Herpetol. Circ. (19):iii + 41 p.
- . 1997. Standard common and current scientific names for North American amphibians and reptiles. 4th ed. SSAR Herpetol. Circ. (25):iii + 40 p.
- , R. Conant, J.E. Huheey, J.L. Knight, E.M. Rundquist, and H.M. Smith. 1982. Standard common and current scientific names for North American amphibians and reptiles. 2nd ed. SSAR Herpetol. Circ. (12):1–28.
- Conant, R., F.R. Cagle, C.J. Goin, C.H. Lowe, Jr., W.T. Neill, M.G. Netting, K.P. Smith, C.E. Shaw, R.C. Stebbins, and C.M. Bogert. 1956. Common names for North American amphibians and reptiles. Copeia 1956:172–185.
- Corkran, C.C. and C.R. Thoms. 1996. Amphibians of Oregon, Washington, and British Columbia. Lone Pine Publ., Vancouver, British Columbia.
- Dodd, C.K. and R.A. Seigel. 1991. Relocation, repatriation, and translocation of amphibians and reptiles: are they conservation strategies that work? Herpetologica 47:336–350.
- Duellman, W.E. and S.S. Sweet. 1999. Distribution patterns of amphibians in the Nearctic region of North America, p. 31–109. In W.E. Duellman (ed.), Patterns of Distribution of Amphibians. A Global Perspective. The John Hopkins University Press, London.
- Dumas, P.C. 1957. Range extension of the salamander *Plethodon vandykei idahoensis*. Copeia 1957:147–148.
- Fitcher, E. and A.D. Linder. 1964. The Amphibians of Idaho. Spec. Publ. Idaho St. Univ. Mus., Pocatello.
- Frank, N. and E. Ramus. 1995. A Complete Guide to Scientific and Common Names of Reptiles and Amphibians of the World. NG Publ. Inc., Pottsville, Pennsylvania.
- Franz, R. 1970. Additional notes on the Coeur d'Alene Salamander, *Plethodon vandykei idahoensis*, in Montana. Bull. Maryland Herpetol. Soc. 6:53–55.
- . 1971. Notes on the distribution and ecology of the herpetofauna of northwestern Montana. Bull. Maryland Herpetol. Soc. 7:1–10.
- Frost, D.R. (ed.). 1985. Amphibian Species of the World. Allen Press, Inc. and Assoc. Syst. Collections, Lawrence, Kansas.
- Green, D.M. 1999. The amphibians of British Columbia: a taxonomic catalogue. B.C. Min. Envir., Wildl. Br. and Res. Br., Wildl. Bull. B-87, Victoria.
- Groves, C.R., E.F. Cassirer, D.L. Genter, and J.D. Reichel. 1996. Coeur d'Alene Salamander (*Plethodon idahoensis*). Nat. Areas Journ. 16: 238–247.
- Harding, K.A. 1983. Catalogue of New World Amphibians. Pergamon Press, Oxford.
- Heglund, P.J., G.B. Hamilton, C.R. Peterson, and W.A. Wall. 2000. The distribution and monitoring of amphibians on an industrial forest in northern Idaho (abstract). Northwest Nat. 81:76.
- Herrington, R.E. 1985. The ecology, reproductive biology and management of the Larch Mountain Salamander (*Plethodon larselli* Burns) with comparisons to two other sympatric plethodons. Ph.D. Diss., Washington St. Univ., Pullman.
- and J.H. Larsen, Jr. 1987. Reproductive biology of the Larch Mountain Salamander (*Plethodon larselli*). J. Herpetol. 21:48–56.
- Highton, R. 1962. Revision of North American salamanders of the genus *Plethodon*. Bull. Florida St. Mus. 6:235–367.
- . 1990. Taxonomic treatment of genetically differentiated populations. Herpetologica 46:114–121.
- and A. Larson. 1979. The genetic relationships of the salamanders of the genus *Plethodon*. Syst. Zool. 28:579–599.
- Hilton, W.A. 1948. Salamander notes from the northwest. 1948. Herpetologica 4:120.
- . 1951. A nasal gland in plethodontid salamanders. Copeia 1951:75–76.
- Holmberg, R.G., N.P.D. Angerilli, and L.J. LaCasse. 1984. Overwintering aggregations of *Leiobunum paessleri* in caves and mines (Arachnida, Opiliones). J. Arachnol. 12:195–204.
- Howard, J.H., L.W. Seeb, and R.L. Wallace. 1993. Genetic variation and population divergence in the *Plethodon vandykei* species group (Caudata: Plethodontidae). Herpetologica 49:238–247.
- Johnson, P.J. 1987. Larval taxonomy, biology, and biogeography of the genera of North American Byrrhidae (Insecta: Coleoptera). M.S. Thesis, Univ. Idaho, Moscow.
- Jones, L.L.C. 1989. *Plethodon vandykei* (Van Dyke's Salamander). Reproduction. Herpetol. Rev. 20:48.
- Larson, M.D., A.G. Wilson, Jr., and J.H. Larsen, Jr. 1998. *Plethodon idahoensis* (Coeur d'Alene Salamander). Egg mass. Herpetol. Rev. 29:163.
- Lindeman, P.V. 1993. Food of the Coeur d'Alene Salamander (*Plethodon idahoensis*) at Elk Creek Falls, Idaho. Northwest Nat. 74:58–59.
- Linder, A.D. and E. Fitcher. 1977. The Amphibians and Reptiles of Idaho. Idaho St. Univ. Press, Pocatello.
- Lowe, C.H., Jr. 1950. The systematic status of the salamander *Plethodon hardii*, with a discussion of biogeographical patterns in *Aneides*. Copeia 1950:92–99.
- Lynch, J.E., Jr. 1984. Reproductive ecology of *Plethodon idahoensis*. M.S. Thesis. Univ. Idaho, Moscow.
- and R.L. Wallace. 1987. Field observations of courtship behavior in Rocky Mountain populations of Van Dyke's Salamander, *Plethodon vandykei*, with a description of its spermatophore. J. Herpetol. 21:337–340.
- Munro, W.T. 1993. Designation of endangered species, subspecies and populations by COSEWIC, p. 213–227. In M.A. Fenger, E.H. Miller, T.A. Johnson, and E.J.R. Williams (eds.), Our Living Legacy: Proceedings of a Symposium on Biological Diversity. B.C. Min. Envir. Roy. Mus., Victoria.
- Nielson, M., K. Lohman, and J. Sullivan. 2001. Phylogeography of the Tailed Frog (*Ascaphus truei*): implications for the biogeography of the Pacific Northwest. Evolution 55:147–160.
- Nussbaum, R.A., E.D. Brodie, Jr., and R.M. Storm. 1983. Amphibians and Reptiles of the Pacific Northwest. Univ. Press Idaho, Moscow.
- Orchard, S.A. 1990. Amphibians, p. 23–24. In R.A. Cannings and A.P.

- Harcombe (eds.), The Vertebrates of British Columbia: Scientific and English Names. B.C. Mus. Heritage Rec. (20); Wildl. Rept. (24), Victoria.
- . 1992. Amphibian population declines in British Columbia, p. 10–13. In C.A. Bishop and K.E. Pettit (eds.), Declines in Canadian Amphibian Populations: Designing a National Monitoring Strategy. Can. Wildl. Serv. Occ. Pap. (76), Ottawa, Ontario.
- Peterson, S.M., A.G. Wilson, Jr., and E.M. Wilson. 1999. *Plethodon idahoensis* (Coeur d'Alene Salamander). Skeletal abnormality. Herpetol. Rev. 30:222.
- Petranka, J.W. 1998. Salamanders of the United States and Canada. Smithsonian Inst. Press, Washington, D.C.
- Powell, R., J.T. Collins, and E.D. Hooper, Jr. 1998. A Key to Amphibians & Reptiles of the Continental United States and Canada. Univ. Press Kansas, Lawrence.
- Riexinger, P. 1985. Legislative alert. Federal register notices. Herpetol. Rev. 16:70.
- Savage, J.M. 1952. The distribution of the Pacific Giant Salamander, *Dicamptodon ensatus*, east of the Cascade Mountains. Copeia 1952: 183.
- Schmidt, K.P. 1953. A Check List of North American Amphibians and Reptiles. ASIH, Univ. Chicago Press, Chicago.
- Slater, J.R. 1941. The distribution of amphibians and reptiles in Idaho. Occ. Pap. Dept. Biol. Coll. Puget Sound 14:78–109.
- and J.W. Slipp. 1940. A new species of *Plethodon* from northern Idaho. Occ. Pap. Dept. Biol. Coll. Puget Sound 8:38–43.
- Smith, H.M. 1978. A Guide to Field Identification: Amphibians of North America. Golden Press, New York.
- Staub, N.L. 1995. *Plethodon idahoensis* (Coeur d'Alene Salamander). Predation. Herpetol. Rev. 26:199.
- Stebbins, R.C. 1951. Amphibians of Western North America. Univ. California Press, Berkeley.
- . 1954. Amphibians and Reptiles of Western North America. McGraw-Hill Book Co., New York.
- . 1966. A Field Guide to Western Amphibians and Reptiles. Houghton Mifflin Co., Boston, Massachusetts.
- . 1985. A Field Guide to Western Amphibians and Reptiles. 2nd ed. Houghton Mifflin Co., Boston, Massachusetts.
- Steeger, C. and M. Fenger. 1992. Wildlife diversity and habitat relationships, p. 200–213. In T.F. Braumandl and M.P. Curran (eds.), A Field Guide for Site Identification and Interpretation for the Nelson Forest Region. B.C. Min. For., Victoria.
- Stejneger, L. and T. Barbour. 1943. A Check List of North American Amphibians and Reptiles. 5th ed. Harvard Univ. Press, Cambridge, Massachusetts.
- Tanner, W.W. 1941. The reptiles and amphibians of Idaho No. 1. Great Basin Nat. 2:87–97.
- Teberg, E.K. 1963. An extension into Montana of the known range of the salamander *Plethodon vandykei idahoensis*. Herpetologica 19:287.
- . 1965. Range extensions of the salamander *Plethodon vandykei idahoensis*. Copeia 1965:244.
- Thompson, L.S. 1984. Biogeography of Montana: preliminary observations on major faunal and floristic distribution patterns (abstract). Proc. Montana Acad. Sci. 43:40–41.
- Thurrow, G.R. 1968. On the small black *Plethodon* problem. W. Illinois Univ. Ser. Biol. Sci. 6:1–48.
- Wake, D.B. 1966. Comparative osteology and evolution of the lungless salamanders, family Plethodontidae. Mem. S. California Acad. Sci. 4:1–111.
- Weller, W.F. and D.M. Green. 1997. Checklist and current status of Canadian amphibians, p. 309–328. In D.M. Green (ed.), Amphibians in Decline: Canadian Studies of a Global Problem. Herpetol. Conserv. (1). SSAR, St. Louis, Missouri.
- Wilson, A.G., Jr. 1993. Biogeographic and morphometric analyses of the *Plethodon vandykei* species group. Ph.D. Diss., Washington St. Univ., Pullman.
- and J.H. Larsen, Jr. 1988. Activity and diet in seepage-dwelling Coeur d'Alene Salamanders (*Plethodon vandykei idahoensis*). Northwest Sci. 62:211–217.
- and —. 1998. Biogeographic analysis of the Coeur d'Alene Salamander (*Plethodon idahoensis*). Northwest Sci. 72:111–115.
- and —. 1999. Morphometric analysis of salamanders of the *Plethodon vandykei* species group. Amer. Midl. Nat. 141:266–276.
- and E.M. Simon. 1985. *Plethodon vandykei idahoensis* (Coeur d'Alene Salamander). Predation. Herpetol. Rev. 16:111.
- , —, and J.H. Larsen, Jr. 1989. Range extension for the Coeur d'Alene Salamander, *Plethodon vandykei idahoensis*, to the Canada-United States border. Can. Field-Nat. 103:93–94.
- and E.M. Wilson. 1996. *Plethodon idahoensis* (Coeur d'Alene Salamander). Snake predation. Herpetol. Rev. 27:138.
- , —, C.R. Groves, and R.L. Wallace. 1997. U.S. distribution of the Coeur d'Alene Salamander (*Plethodon idahoensis* Slater and Slipp). Great Basin Nat. 57:359–362.

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Primary editor for this account, Brian T. Miller.

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